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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,811	07/17/2003	Alistair Edwin May	8054.010	8991

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EXAMINER

SHERMAN, STEPHEN G

ART UNIT PAPER NUMBER

2629

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/620,811	MAY, ALISTAIR EDWIN	
	Examiner	Art Unit	
	Stephen G. Sherman	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed the 23 June 2006.

Claims 1-20 are pending.

Response to Arguments

2. Applicant's arguments filed the 23 June 2006 have been fully considered but they are not persuasive.

On page 6, paragraph 3 the applicant argues the rejection of claims 1-3, 6, 13, 15-17 and 20 as being anticipated by Junod. The applicant's main argument is that since the RF circuitry is disconnected when the hand detection circuit is connected, the antenna cannot be used to detect any characteristic of a radio channel, and more specifically that the hand detection circuit 126 does not function to detect changes in radio channel characteristics as the hand detection circuit is not designed to detect RF transmissions. The examiner respectfully disagrees.

The examiner points out that even though the initial signals detected by the hand detection unit are capacitive, in order for the hand detection unit to communicate with the RF circuit to cause it to wake up, the signals sent to the RF circuit would have to be radio frequency, otherwise the RF circuit would be unable to identify it. Furthermore, the examiner understands that the invention according to the applicant's specification is actually that RF circuitry sends signals during a sleep mode, and then detects the

reflection, attenuation or detuning of the signals using a sensor and when a user gets closer to the mouse, the level of the reflection, attenuation or detuning of the received signals passes a pre-set point and the mouse returns from sleep mode, and that Junod does not teach this. However, the invention as claimed does not require this operation, but merely that the radio communication unit transmits the movement and button presses of the mouse. The radio communication unit does not need to receive the incoming radio signals from the antenna. Therefore the cited reference, Junod, teaches the limitations that are in the claims.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 6, 13, 15-17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Junod et al. (US 2002/0126094).

Regarding claim 1, Junod et al. disclose a radio-capable device (Figure 1, mouse 10), comprising:

a data collection unit for collecting data (Figure 8, modulator 136. Paragraph [0050] states that the modulator receives a data signal indicating mouse movements and button presses on a line 138.), and

having a normal operating mode, in which it is enabled for collecting data, and a low-power mode (Paragraphs [0051]-[0052]. The examiner interprets that since modulator 136 in Figure 8 is part of the RF circuitry 128 of Figure 128, that it has a normal operating mode called the “running mode” in paragraph [0051] and a low-power mode called a “true sleep mode” in paragraph [0052].);

a radio communication unit for transmitting over a radio channel data collected by the data collection unit (Figure 8, items 140, 142 and 144 and paragraph [0050]. The

examiner interprets that since the modulator 136 receives the data and passes it on to the antenna driver 140, matching circuit 142 and then to the capacitive antenna 144 that the data will then be transmitted by the antenna over a radio channel.); and

a radio channel sensor (Figure 7, item 126. The examiner interprets that the hand detect circuit would be a sensor since it is used detect the presence of a hand and that if an antenna was used to detect the presence of a hand as stated in paragraph [0049] that the sensor would be a radio channel sensor.) coupled to the radio communication unit for sensing at least one physical characteristic of the radio channel (Paragraph [0049]. The examiner interprets that if the antenna is used to detect the presence of a hand presence to wake up the device from the sleep mode that it would have to sense a characteristic of the radio channel.), and

arranged to cause the data collection unit to enter the normal operating mode if the physical characteristic meets a pre-set threshold (Paragraphs [0024]-[0025] and [0046]. The examiner interprets that since the inputs are compared to a reference threshold that if this value is exceeded the device will change operating modes.).

Regarding claim 2, Junod et al. disclose a radio-capable device as claimed in claim 1, wherein the radio channel sensor is arranged to sense the said characteristic by means of at least one antenna of the radio communication unit (Paragraph [0049]).

Regarding claim 3, Junod et al. disclose a radio-capable device as claimed in claim 1, wherein the data collection unit is capable of collecting user inputs (Figure 8 and paragraph [0050]).

Regarding claim 6, Junod et al. disclose a radio-capable device as claimed in claim 3, wherein the device is a mouse or a trackball (Figure 1, item 10).

Regarding claim 13, Junod et al. disclose a radio-capable device as claimed in claim 1, wherein the device is a wireless device (Figures 7 and 8, RF circuitry 128 is used to send the data collected to an external device, making the device itself wireless.).

Regarding claim 15, please refer to the rejection of claim 1, and Junod et al. also disclose a radio channel sensor (Figure 7, item 126. The examiner interprets that the hand detect circuit would be a sensor since it is used detect the presence of a hand and that if an antenna was used to detect the presence of a hand as stated in paragraph [0049] that the sensor would be a radio channel sensor.) coupled to the radio communication unit for sensing a change in at least one physical characteristic of the radio channel that is indicative of use of the device by a user (Paragraph [0049]. The examiner interprets that if the antenna is used to detect the presence of a hand presence to wake up the device from the sleep mode that it would have to sense a characteristic of the radio channel.); and

arranged to cause that data collection unit to enter the normal operating mode from the low-power mode upon sensing of said change (Paragraph [0049]. The examiner interprets that waking up the device is causing the device to enter a normal operating mode.).

Regarding claim 16, Junod et al. disclose a radio-capable device as set forth in claim 15, wherein said change in at least one physical characteristic comprises a change in received signal level (Paragraphs [0024]-[0025]. The examiner interprets that since the device compares values and enters an operating mode based on the difference that the values change and that these values are the signal level.).

Regarding claim 17, please refer to the rejection of claim 1.

Regarding claim 20, Junod et al. disclose a wireless device having a normal operational mode and a low-power standby mode (Figure 1, item 10), comprising:

a transceiver capable of transmitting and receiving signals over a wireless communication channel (Figure 7 and paragraph [0050]. The examiner interprets that since it is stated that the antenna can also receive signals that the same antenna is used to transmit and receive signals, which make the antenna a transceiver.); and

a wireless communication channel sensor (Figure 7, item 126. The examiner interprets that the hand detect circuit would be a sensor since it is used detect the presence of a hand and that if an antenna was used to detect the presence of a hand as

stated in paragraph [0049] that the sensor would be a wireless communication sensor.) coupled to the transceiver for sensing a change in at least one physical characteristic of signals received over the wireless channel that is indicative of use of the device by a user, and arranged to cause the wireless device to enter the normal operational mode from the low-power mode upon sensing of said change (Paragraph [0049]. The examiner interprets that if the antenna is used to detect the presence of a hand presence to wake up the device from the sleep mode that it would have to sense a characteristic of the wireless channel.).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 4-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junod et al. (US 2002/0126094).

Regarding claim 4, Junod et al. disclose a radio-capable device as claimed in claim 3.

Junod et al. fail to explicitly teach wherein the data collection unit comprises an optical sensor for sensing movement of the device relative to a surface external to the device.

However, Junod et al. do disclose in the Background of the Invention section in paragraph [0007] that the problem of power consumption in mice is when the mouse has an optical module and is wireless, therefore needing an automatic power saving mode.

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made that the sensing device used in the mouse taught by Junod et al. is an optical one since Junod et al. disclose that an improved automatic power saving mode for an optical wireless mouse is desirable and his invention is an automatic power saving mode for a mouse.

Regarding claim 5, Junod et al. disclose a radio-capable device as claimed in claim 4, wherein the optical sensor is fully or partially disabled in the low-power mode (Paragraph [0052]. The examiner interprets that if only the hand detect circuitry is

turned on and the other circuitry is either turned off or in a sleep mode that the optical sensor would also be in a sleep mode or turned off.).

Regarding claim 14, Junod et al. disclose a radio-capable device as claimed in claim 1.

Junod et al. fail to explicitly teach wherein the device is powered by a battery.

However, Junod et al. do disclose in the Background of the Invention section in paragraph [0007] that the problem of power consumption in mice is when the mouse has an optical module and is wireless, making it difficult to make the batteries last more than a couple of months, therefore needing an automatic power saving mode.

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made that the mouse taught by Junod et al. is powered by a battery since Junod et al. disclose that an improved automatic power saving mode for an optical wireless mouse powered by a battery is desirable and his invention is an automatic power saving mode for a mouse.

9. Claims 7-12 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junod et al. (US 2002/0126094) in view of Hinckley et al. (US 2002/0021278).

Regarding claim 7, Junod et al. disclose a radio-capable device as claimed in claim 1.

Junod et al. fail to teach of a radio-capable device wherein the physical characteristic is the tendency of the channel to return to the radio communication unit radio signals transmitted by the radio communication unit.

Hinckley et al. disclose a radio-capable device wherein the physical characteristic is the tendency to return to the radio communication unit radio signals transmitted by the radio communication unit (Figure 1 and paragraph [0042]-[0043]. The examiner interprets that detecting the signals being reflected is the tendency to return the signals that were transmitted as stated in paragraph [0043] and that the transmitter 264 and receiver 266 are the radio communication unit since they are used for transmitting and receiving data.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the characteristic of the reflection of the signals transmitted by an antenna as taught by Hinckley et al. to replace the capacitive sensing antenna taught by Junod et al. such that the antenna in the mouse of Junod et al. would detect the proximity of the user by the reflection of the signals sent by the antenna in order to create additional power saving since the hand detection circuit taught by Junod et al. constantly measured the capacitance when the hand detection circuit was connected, however, the power consumed by the sensor taught by Hinckley et al. is limited by using a pulsing method which consumes less power.

Regarding claim 8, Junod et al. disclose a radio-capable device as claimed in claim 1.

Junod et al. fails to teach wherein the physical characteristic is one or more of reflection of radio signals transmitted by the device, absorption of signals transmitted to or by the device, and de-tuning of one or more antennas of the device.

Hinckley et al. disclose of radio-capable device wherein the physical characteristic is one or more of reflection of signals transmitted by the device, absorption of signals transmitted to or by the device, and de-tuning of one or more antennas of the device (Paragraph [0043]. The examiner interprets that that since reflected signals are received, that this means that they are absorbed and that since the device is capable of determining these reflected waves that the antenna would also be detuned.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the characteristic of the reflection of the signals transmitted by an antenna as taught by Hinckley et al. to replace the capacitive sensing antenna taught by Junod et al. such that the antenna in the mouse of Junod et al. would detect the proximity of the user by the reflection of the signals sent by the antenna in order to create additional power saving since the hand detection circuit taught by Junod et al. constantly measured the capacitance when the hand detection circuit was connected, however, the power consumed by the sensor taught by Hinckley et al. is limited by using a pulsing method which consumes less power.

Regarding claim 9, Junod et al. and Hinckley et al. disclose a radio-capable device as claimed in claim 7.

Junod et al. also disclose wherein the radio communication unit comprises a transmitter and a receiver which share an antenna (Paragraph [0050]. The examiner interprets that since it is stated that the antenna can also receive signals that the same antenna is used to transmit and receive signals.).

Hinckley et al. also discloses a radio-capable device wherein the sensor is arranged to sense the level of signals transmitted by the transmitter that are received by the receiver (Paragraph [0043] and [0044] and Figure 1 items 262, 264 and 266, where the radio sensor unit, item 262, senses the level of signals transmitted by 264 and received by 266 as stated in paragraph [0044].).

Regarding claim 10, Junod et al. and Hinckley et al. disclose a radio-capable device as claimed in claim 7.

Hinckley et al. also discloses a radio-capable device wherein the radio communication unit comprises a transmitter having a first antenna and a receiver having a second antenna (Figure 1, items 264 and 266, and Figure 3. The examiner interprets that since the transmitter, 264, and the receiver, 266 are separated in Figure 3 that they would have separate antennas.) and the radio channel sensor (Figure 1, item 262) is arranged to sense the level of signals transmitted by the transmitter that are received by the receiver (Paragraph [0043] and [0044] and Figure 1 items 262, 264 and 266, where the radio sensor unit, item 262, senses the level of signals transmitted by 264 and received by 266 as stated in paragraph [0044].).

Regarding claim 11, Junod et al. ad Hinckley et al. disclose a radio-capable device as claimed in claim 9.

Hinckley et al. also disclose a radio-capable device wherein the characteristic is a change in the sensed level (Paragraph [0044]. The examiner interprets that since the items are in a range level of distance that the level is sensed between the ranges.).

Regarding claim 12, Junod et al. ad Hinckley et al. disclose a radio-capable device as claimed in claim 11.

wherein the characteristic is a change in the sensed level of greater than a pre-set amount in pre-set time.

Hinckley et al. also disclose a radio-capable device wherein the characteristic is a change in the sensed level of greater than a pre-set amount in pre-set time (Paragraphs [0044] and [0046]. The examiner interprets that in paragraph [0044] since there are three ranges of values that a change in the level is sensed and that since the 0 to 7 centimeters range is considered close, that there is a pre-set amount which the level could be less than or greater than. In paragraph [0046] the examiner interprets that the pulsing done a few times per second would be a pre-set time in which the level would be sensed.).

Regarding claim 18, this claim is rejected under the same rationale as claim 12.

Regarding claim 19, Junod et al. disclose a radio-capable device as set forth in claim 15.

Junod et al. fail to disclose wherein said radio channel sensor further controls said radio communication unit to transmit dummy signals over said radio channel when said device is in low-power mode.

Hinckley et al. disclose wherein a radio channel sensor further controls a radio communication unit to transmit dummy signals over a radio channel (Figure 1 and paragraphs [0042]-[0043] and paragraph [0046]. The examiner interprets that pulsing the transmitter is transmitting dummy signals over the channel.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the method of transmitting dummy signals over a radio channel to detect the proximity of a user as taught by Hinckley et al. to replace the capacitive sensing in the mouse taught by Junod et al. in order to create additional power saving since the hand detection circuit taught by Junod et al. constantly measured the capacitance when the hand detection circuit was connected, however, the power consumed by the sensor taught by Hinckley et al. is limited by using a pulsing method which consumes less power.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

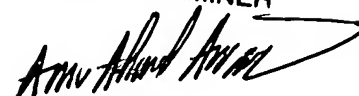
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SS

14 July 2006

AMR A. AWAD
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", with a large, sweeping flourish extending to the right.